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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS:

SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

(Section II, Chapter 14 of Agenda 21)

Report of the Secretary-General of the Conference

INTRODUCTION

1. This document has been prepared by the Secretary-General of the Conference in response to the decision of the Preparatory Committee taken at its third session in A/CONF.151/PC/WG.II/L.21/Rev.1. It is based on the guidance provided by the Preparatory Committee on the structure of Agenda 21; as contained in A/CONF.151/PC/L.49*. As a follow-up to the discussions on Agenda item 4 c in Working Group II during the above session, a note on the implementation of the Code of Practice on the International Transboundary Movement of Radioactive Waste is attached in the Annex of this document. All texts taken verbatim from Prep Com III document A/CONF.151/PC/WG.II/L.19/Add.2/Rev.1, are inserted between double asterisks (** < > **) with reference to the specific relevant paragraph number. When the text has been modified, the double asterisks have been left out and the words "Derived from" are inserted before the reference to paragraph numbers.

PROGRAMME AREA

PROMOTE THE SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES THROUGH INTERNATIONAL AGREEMENTS

Basis for action

2. ** (L.19/Add.2/Rev.1) ‹ In many parts of the world the amounts of radioactive wastes, including those from nuclear power units, medical centres, research institutes, industrial facilities, mining operations, etc. are growing, [particularly in industrialized countries]. Their safe and environmentally sound management, including disposal, is critical, given their characteristics. › ** The OECD countries generated in 1987, approximately 271,000 m^3 of low and intermediate level radioactive wastes and the projected quantities for 1995 are approximately 327,000 m^3. The corresponding figures for developing countries, USSR and Eastern Europe are 54,000 m^3 and 154,000 m^3 respectively[1]. The quantities of intermediate and low-level wastes being generated amount to about 90-95 per cent of all radioactive wastes emanating from power generators, which include also high-level wastes as well as spent fuel. At the end of 1987, the cumulative amount of high-level radioactive wastes (HLW), including spent fuel was about 14,300 m^3 in OECD countries and about 3,600 m^3 in developing countries[2], USSR and Eastern Europe.

Objective

3. ** (L.19/Add.2/Rev.1) To ensure that radioactive wastes are safely managed and disposed of, with a view to protect human health and the environment, › ** within a wider framework of an integrated approach to nuclear safety at the international level.

Activities

Management related:

4. The following activities should be undertaken:

a. ** (p. 1) ‹ [To promote policies and practical measures to prevent and minimize the generation of radioactive wastes] › ** and provide for their safe treatment, conditioning and disposal.

b. Develop and promulgate radioactive waste safety standards as an internationally accepted basis for the safe management and disposal of radioactive wastes.

c. Ensure safe storage and disposal of radioactive wastes in developing countries, including spent radiation sources and spent fuel from power and research reactors, by transfer of relevant technologies to those countries.

International and Regional Cooperation and Coordination:

5. The following activities should be undertaken:

a. ** (p. 3, 4, 5) ‹ Governments should strengthen their efforts to implement the Code of Practice for International Transboundary Movement of Radioactive Waste, and, under the auspices of IAEA, keep the question of [the control of] such movements under active review, [including the desirability of concluding a legally binding instrument,] or [and work towards a target date for a legally binding convention] [including protocols on liability, compensation and compulsory insurance]

b. [Governments should invite the London Dumping Convention to replace the current voluntary moratorium on disposal of low-level radioactive wastes at sea by legally binding ban on such practice] or [Governments should encourage the London Dumping Convention to expedite work to complete studies on replacing the current voluntary moratorium on disposal of low-level radioactive wastes at sea taking into account the precautionary approach, with a view to take a well informed decision on this issue.]

c. [Governments and international organizations should not allow the disposal of high-, intermediate- and low-level radioactive wastes into, under and next to the seabed.] › ** unless scientific evidence shows that such disposal poses no unacceptable risks to man and the environment.

d. ** (p.6) ‹ [Governments should respect the aims of the Bamako Convention and other relevant regional conventions prohibiting the import of all hazardous wastes, including radioactive wastes.] › **

Means of Implementation

Financial and Cost Evaluation:

6. The costs at national level to manage and dispose of radioactive wastes are considerable and will vary, depending on the technology used for disposal[3].

7. An annual cost of about US$ 8 million will be needed to implement this programme through international organizations (mainly IAEA) to further develop international regulations, to promote research policies and international cooperation and to support developing countries to take preventive and corrective action.

Scientific and Technological Means:

8. The following activities should be undertaken:

a. ** (p. 2) ‹ [To promote research on transmutation of highly radioactive wastes and the development of environmentally sound technologies in this area] › **

b. Establish research and assessment programmes concerned with evaluating the health and environmental impact of radioactive waste disposal.

Capacity Building (including Human Resources Development):

9. Assistance to developing countries to establish and/or strengthen radioactive waste management infrastructures - including regulations, organizations, trained manpower and facilities for the handling, processing, storage and disposal of wastes, generated from nuclear applications.

EXPLANATORY NOTES:

1. The quantities are based on the world's total installed nuclear capacity in 1987 and the projected nuclear capacity in 1995. They should be used for trend purposes only, since waste quantities can vary significantly depending on underlying assumptions to determine the amounts generated per installed 1,000 megawatts of electric power. The quoted figures include radioactive waste generated from commercial plant decommissioning. These wastes are primarily LLW since almost 99 per cent of the radioactivity in a reactor at shutdown is contained in the spent fuel elements, which are removed from the reactor vessel at decommissioning and do not constitute part of the decommission wastes. (Source: NEA/OECD)

2. The quoted figures from high-level wastes do not include wastes from military programmes.

3. A number of countries have established special methods of funding nuclear waste management and disposal programmes, and nuclear plant decommissioning. These methods include charging nuclear electricity producers a small fee per kilowatt-hour of electrical generation to cover current and expected costs. The charges are already being included in the electricity rate in several countries. Because of the vast amounts of electricity produced, these small levies are expected to adequately finance nuclear waste management and disposal programmes. On a percentage basis, they are generally expected to range from 2-6 per cent of the total production costs of nuclear power. In absolute terms, total estimated costs vary considerably - an estimated US$ 5.7 billion in Spain to US$ 30 billion in the United States - depending upon the size and requirements of a country's nuclear power and fuel-cycle programme, based on reports at an IAEA symposium in Vienna in 1987. (Source: International Atomic Energy Agency, "Back End of the Nuclear Fuel Cycle: Strategies and Options", Proceedings of a Symposium, Vienna, 11-15 May 1987, jointly organized by IAEA and NEA/OECD, Vienna (1987) - STI/PUB/758).

ANNEX

SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES: REPORT BY THE DIRECTOR-GENERAL OF THE IAEA ON THE CODE OF PRACTICE ON THE INTERNATIONAL TRANSBOUNDARY MOVEMENT OF RADIOACTIVE WASTE

Introduction

1. The disposal of radioactive waste is principally a matter that is controlled at the national level by applying national standards and regulations that are based on internationally accepted principles for radiation protection. The amounts of radioactive wastes, while growing, remain a very small fraction of the volume of chemically hazardous wastes, and all countries having nuclear power programmes, also have programmes to safely manage the resulting radioactive wastes. Disposal of low- and intermediate-level radioactive wastes has been safely practised in a number of countries for many years, and international consensus has been reached on the feasibility of deep geologic repositories for the safe disposal of high-level wastes and spent nuclear fuel, when it has been determined to be waste.

2. At the request of Member States, the IAEA is developing the Radioactive Waste Safety Standards (RADWASS) series of international consensus standards to document the harmonization that exists at the international level on principles and criteria for radioactive waste management, including disposal of radioactive wastes. Based on the recommendation of a Safety Conference conducted by the Agency in September 1991 and adopted by the General Conference, the Agency is developing a proposal on elements of an integrated international approach to all aspects of nuclear safety, including the disposal of radioactive wastes.

The Code of Practice

3. The IAEA General Conference at its 34th Session in September 1990 adopted by consensus a Code of Practice on the International Transboundary Movement of Radioactive Waste (CG(XXXIV)/RES/530) and decided to keep the question of international transboundary movement of radioactive waste under active review, including the desirability of concluding a legally binding instrument under the auspices of the IAEA.

4. The Code of Practice should serve as guidelines to States for the development and harmonization of laws on the international transboundary movement of radioactive waste. Taking into account the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[1], it affirms the sovereign right of every State to prohibit the movement of radioactive waste into, from or through its territory. The Code affirms that any transboundary movement of radioactive waste should only take place in accordance with internationally accepted safety standards, with the prior notification and consent of the sending, receiving and transit States, and in accordance with their respective laws and regulations.

5. The Code exhorts every State not to permit the receipt of radioactive waste for management or disposal unless it has the administrative and

technical capacity and regulatory structure for management and disposal of such waste in a manner consistent with international standards. The sending State should satisfy itself that this requirement is met prior to the international movement of radioactive waste. It provides that the sending State should permit readmission into its territory of any radioactive waste previously transferred from its territory if such a transfer is not or cannot be completed in conformity with this Code unless an alternative safe arrangement can be made. Finally, the Code requests every State to adopt the necessary laws and regulations to ensure that the international transboundary movement of radioactive waste is carried out in accordance with this Code and to cooperate at the bilateral, regional, and international levels for the purpose of preventing any international transboundary movement of radioactive waste that is not in conformity with this Code.

6. The Code also states that the Agency should continue to develop relevant technical standards and provide advice and assistance on all aspects of radioactive waste management and disposal, having particular regard to the needs of developing countries.

Monitoring implementation of the Code: national laws and regulations

7. Following adoption of the Code of Practice by the IAEA's General Conference, the Director-General, in order to monitor the implementation of the Code, requested Member States in January 1991, by circular letter, to inform the Secretariat (i) whether they had adopted legislation and/or appropriate procedures for the regulation of international transboundary movement of radioactive waste; (ii) whether such legislation was in accordance with the provisions of the Code of Practice; and (iii) whether they had any experience relevant to the implementation of the Code.

8. This request for information followed a survey conducted in 1989 as preparatory work for the Code of practice on the basis of laws, regulations, national guidelines and codes provided by 40 Member States, in order to determine whether provisions regarding international transactions involving radioactive waste had been enacted, and to identify relevant general principles contained in that legislation that could be incorporated in the Code of Practice.

9. That survey disclosed that most radioactive waste legislation was of recent origin, and made a distinction between radioactive (nuclear) waste and hazardous chemical and industrial wastes. Almost all legislation provided for a system of licensing and/or control of all radioactive waste related activities. A few, notably developing countries informed the Agency that they had not enacted any laws on waste management as there was no radioactive waste generated by nuclear power installations. Low-level radioactive waste from hospitals and research institutions was either shipped to other countries on the basis of bilateral agreements, or stored in an appropriate location in accordance with safety rules established by the national institutions concerned. Some countries had established national guidelines on radioactive waste management and control, or intended to draft radioactive waste management laws to coincide with a beginning nuclear power programme. Several legislations reviewed contained provisions on the transport of radioactive substances and wastes within the national territory (in accordance with the

IAEA regulations). Principles regarding liability (of the operator, or generator) were also contained in some of the laws. Among the general principles most usually found in the legislation reviewed was the protection of man and the environment, the safety of all operations concerning radioactive wastes.

10. As regards the information requested in 1991 from Member States in order to ascertain the conformity of existing legislation with the Code of Practice, and to obtain further insight into country experience with transboundary movements of radioactive waste, replies were received from over 30 countries in Europe, the Asian and Arab regions, Africa, and Latin America.

11. Almost all countries, notably of Europe, confirmed the existence of legislation and procedures for the regulation of radioactive waste management, which generally included provisions for movement of such waste within the national territory. Most countries having enacted such legislation affirmed that its content was in accordance with the general principles established by the IAEA Code of Practice. Countries that had so far not adopted pertinent legislation on radioactive waste management, indicated that they intended to do so, and to take the Code of Practice into account in drafting new legislation.

12. As regards State practice regarding the transboundary movement of radioactive waste, the experience reported ranges from the return to the supplier of spent sealed sources - a practice reported by a number of developing countries - to a control or licensing system for the import and export of wastes, a "notification-authorization" system, and, in more recent legislation, notably in Africa, the strict prohibition of export, import or transit of radioactive waste.

Follow-up

13. Whilst it is certainly premature to judge, only one year after its adoption by the IAEA General Conference, the Code of Practice's effectiveness as a means to harmonize national approaches or to prevent illegal movements worldwide, few countries only have expressed specifically their preference for an international convention in this area.

14. It is therefore the Agency's intention to continue keeping the issue under active consideration, to consult with its Member States, and review, in conjunction with ongoing efforts to establish a nuclear safety convention, the need to develop a convention or protocol on transboundary radioactive waste movements.

Other issues

15. Regarding the broader context of nuclear safety, the IAEA General Conference at its 35th Session adopted a resolution regarding "Measures to Strengthen International Cooperation in Matters Relating to Nuclear Safety and Radiological Protection" (GC(XXXV)/RES/553) stressing, inter alia, "the need to consider a harmonized international approach to all aspects of nuclear safety, including safety objectives for nuclear waste".

Notes

1. The Executive Director of UNEP in a letter dated 21 January 1991 to Dr. H. Blix, Director General of the IAEA, confirmed that "the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal have been taken into account. I refer, in particular, to the two most important principles in the Basel Convention, namely, the sovereign right of every State to prohibit the movement of waste into, from or through its territory, as well as the principle of prior written notification and consent of the sending, receiving or transit States. This constitutes, in my opinion, the implementation of resolution 5 adopted by the Basel Conference in March 1989 and titled "Harmonization of Procedures of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the Code of Practice for International Transactions Involving Nuclear Wastes.' UNEP fully supports the decision of the General Conference to keep the question of the international movement of radioactive waste under active review including the desirability of including a legally binding instrument under the auspices of the IAEA.

2. For the Commission of the European Communities, the Director-General for the Environment, Nuclear Safety and Civil Protection noted that "the Code, aiming at preventing possible radiological dangers arising from unauthorized and improper management and disposal of radioactive waste, contributes to the transparency of nuclear operations. ... The Community [has] progressed in the same direction through the adoption, on 15 December 1989, of the Fourth ACP-CEE Convention known as the Lomé 4 Convention. The Convention prohibits the export of radioactive waste from the Community to the 68 ACP States and the import into the ACP States of such waste from any other country. The Convention specifically makes reference to the IAEA for the definition of radioactive waste ...".